

CLAIMS

1. A method of controlling a drive of a vehicle during both an acceleration phase and a constant ground speed phase of operation, the drive including an engine controlled by an electronic control unit, the engine driving an infinitely variable change-speed gear, the method including setting a desired ground speed of the vehicle and being characterised by repeating a cycle of steps a), b) and c) in both phases of operation, said steps comprising:-

- a) determining any change in the torque % level of the engine;
- b) calculating a theoretical engine speed in response to the change in torque % level and the actual speed of the engine caused by the change in torque % level, said theoretical engine speed being determined with the aid of a speed dependant performance parameter characteristic of the engine stored in the control unit which defines a desired operating range of said performance parameter, to bring the engine operation back into said desired operating range of the parameter, adjusting the engine speed to the theoretical speed, and
- c) calculating and adjusting the gear ratio of the change-speed gear dependant on the theoretical engine speed of step b) to maintain the desired ground speed of the vehicle,

the first step of the cycle being step a) or c) depending on the phase of operation of the vehicle.

2. A method according to Claim 1 for controlling the vehicle when a desired constant ground speed has been achieved, the method being characterised by comprising executing said steps in the order a), b), c) and repeating said steps to maintain the engine in the desired operation range of the parameter with the vehicle working at the desired constant ground speed despite changes in engine load.
3. A method according to Claim 1 for controlling the vehicle whilst in an acceleration phase, the method being characterised by including the steps of setting a predetermined level of acceleration and initiating the acceleration phase followed by repeating steps c), a), b) until the vehicle has accelerated to the desired ground speed, the gear ratio selected in step c) being dependent on the set level of predetermined acceleration.

4. A method according to Claim 1, the method being characterised in that for increments of load on the engine the performance characteristic of the engine stored in the control unit is defined by a boundary curve (G1) which increases the engine speed within maximum achievable power, and for decrements in load on the engine performance characteristic of the engine stored in the control units is defined by a further boundary curve (G2) which reduces engine speed, the boundary curves combining to define within them a field of low fuel consumption within which the engine can operate at the prevailing load level by adjustment of the engine speed.
5. A vehicle comprising an engine controlled by an electronic control unit, the engine driving an infinitely variable change-speed gear, the drive being characterised by being controlled by a method according to claim 1.